



APPENDIX

IN THE CLAIMS:

Please amend claims 1, 9, 17, and 25-27; and add new claims 36-47 as follows:

1. (Four times amended) An apparatus for converting an input voice signal into an output voice signal according to a reference voice signal, the apparatus comprising:

extracting means for extracting only deterministic [a plurality of sinusoidal wave] components from the input voice signal, the [sinusoidal wave] deterministic components including a plurality of sinusoidal wave components, wherein the input voice signal includes the deterministic components and residual components [being spectral wave components of the input voice and in the form of at least frequency value coordinates, wherein a plurality of frames having spectrum data are created from the input voice signal, and corresponding peak values of the spectrum data in the frames are used to determine the spectral wave components];

memory means for memorizing reference pitch information representative of a pitch of the reference voice signal;

modulating means for modulating the frequency value coordinates of the sinusoidal wave components of the input voice signal according to the reference pitch information retrieved from the memory means; and

mixing means for mixing the plurality of the sinusoidal wave components having the modulated frequency value coordinates to synthesize the output

voice signal having a pitch different from that of the input voice signal and influenced by that of the reference voice signal.

9. (Four times amended) An apparatus for converting an input voice signal into an output voice signal according to a reference voice signal, the apparatus comprising:

extracting means for extracting only deterministic [a plurality of sinusoidal wave] components from the input voice signal, the [sinusoidal wave] deterministic components including a plurality of sinusoidal wave components, wherein the input voice signal includes the deterministic components and residual components [being spectral wave components of the input voice and in the form of at least amplitude value coordinates, wherein a plurality of frames having spectrum data are created from the input voice signal, and corresponding peak values of the spectrum data in the frames are used to determine the spectral wave components];

memory means for memorizing reference amplitude information representative of amplitudes of the sinusoidal wave components contained in the reference voice signal;

modulating means for modulating the amplitude value coordinates of the sinusoidal wave components of the input voice signal extracted from the input voice signal according to the reference amplitude information retrieved from the memory means; and

mixing means for mixing the plurality of the sinusoidal wave components having the modulated amplitude value coordinates to synthesize the output

voice signal having a timbre different from that of the input voice signal and influenced by that of the reference voice signal.

17. (Four times amended) An apparatus for synthesizing an output voice signal from an input voice signal and a reference voice signal, the apparatus comprising:

an analyzer device that analyzes only deterministic [a plurality of sinusoidal wave] components contained in the input voice signal to derive a parameter set of an original frequency and an original amplitude, the [sinusoidal wave] deterministic components including a plurality of sinusoidal wave components, wherein the input voice signal includes the deterministic components and residual components [being spectral wave components of the input voice, the parameter set representing a corresponding sinusoidal wave component, wherein a plurality of frames having spectrum data are created from the input voice signal, and corresponding peak values of the spectrum data in the frames are used to determine the spectral wave components];

a source device that provides reference information characteristic of the reference voice signal;

a modulator device that modulates the parameter set of the sinusoidal wave components according to the reference information; and

a regenerator device that operates according to each of the parameter sets as modulated to regenerate each of the sinusoidal wave components so that at least one of the frequency and the amplitude of each sinusoidal wave component as regenerated varies from the original one, and that mixes the

regenerated sinusoidal wave components together to synthesize the output voice signal.

25. (Four times amended) A method of converting an input voice signal into an output voice signal according to a reference voice signal, the method comprising the steps of:

extracting only deterministic [a plurality of sinusoidal wave] components from the input voice signal, the [sinusoidal wave] deterministic components including a plurality of sinusoidal wave components, wherein the input voice signal includes the deterministic components and residual components [being spectral wave components of the input voice and in the form of at least frequency value coordinates, wherein a plurality of frames having spectrum data are created from the input voice signal, and corresponding peak values of the spectrum data in the frames are used to determine the spectral wave components];

memorizing referencing pitch information representative of a pitch of the reference voice signal;

modulating the frequency value coordinates of the sinusoidal wave components of the input voice signal according to the reference pitch information; and

mixing the plurality of the sinusoidal wave components having the modulated frequency value coordinates to synthesize the output voice signal having a pitch different from that of the input voice signal and influenced by that of the reference voice signal.

26. (Four times amended) A method of converting an input voice signal into an output voice signal according to a reference voice signal, the method comprising the steps of:

extracting only deterministic [a plurality of sinusoidal wave] components from the input voice signal, the [sinusoidal wave] deterministic components including a plurality of sinusoidal wave components, wherein the input voice signal includes the deterministic components and residual components [being spectral wave components of the input voice signal and in the form of at least amplitude value coordinates, wherein a plurality of frames having spectrum data are created from the input voice signal, and corresponding peak values of the spectrum data in the frames are used to determine the spectral wave components];

memorizing reference amplitude information representative of amplitudes of the sinusoidal wave components contained in the reference voice signal;

modulating the amplitude value coordinates of the sinusoidal wave components of the input voice signal extracted from the input voice signal according to the reference amplitude information retrieved from the memory means; and

mixing the plurality of the sinusoidal wave components having the modulated amplitude value coordinates to synthesize the output vice signal having a timbre different from that of the input voice signal and influenced by that of the reference voice signal.

27. (Four times amended) A machine readable medium used in a

computer machine having a CPU for synthesizing an output voice signal from an input voice signal, the medium contains program instructions executed by the CPU for causing the computer machine to perform the method comprising the steps of:

analyzing only deterministic [a plurality of sinusoidal wave] components contained in the input voice signal to derive a parameter set of an original frequency and an original amplitude, the [sinusoidal wave] deterministic components including a plurality of sinusoidal wave components, wherein the input voice signal includes the deterministic components and residual components [being spectral wave components of the input voice, the parameter set representing a corresponding sinusoidal wave component, wherein a plurality of frames having spectrum data are created from the input voice signal, and corresponding peak values of the spectrum data in the frames are used to determine the spectral wave components];

providing reference information characteristic of the reference voice signal;

modulating the parameter set of the sinusoidal wave components according to the reference information; and

regenerating each of the sinusoidal wave components according to each of the modulated parameter sets so that at least one of the frequency and the amplitude of each regenerated sinusoidal wave components varies from the original one, and

mixing the regenerated sinusoidal wave components together to

synthesize the output voice signal.

36. (New) The apparatus according to claim 1, wherein the deterministic components include peak values of the input voice signal in a frequency spectrum.

37. (New) The apparatus according to claim 1, wherein the residual components include deviation components between a synthetic voice signal and the input voice signal.

38. (New) The apparatus according to claim 9, wherein the deterministic components include peak values of the input voice signal in a frequency spectrum.

39. (New) The apparatus according to claim 9, wherein the residual components include deviation components between a synthetic voice signal and the input voice signal.

40. (New) The apparatus according to claim 17, wherein the deterministic components include peak values of the input voice signal in a frequency spectrum.

41. (New) The apparatus according to claim 17, wherein the residual components include deviation components between a synthetic voice signal and the input voice signal.

42. (New) The method according to claim 25, wherein the deterministic components include peak values of the input voice signal in a frequency spectrum.

43. (New) The method according to claim 25, wherein the residual

components include deviation components between a synthetic voice signal and the input voice signal.

44. (New) The method according to claim 26, wherein the deterministic components include peak values of the input voice signal in a frequency spectrum.

45. (New) The method according to claim 26, wherein the residual components include deviation components between a synthetic voice signal and the input voice signal.

46. (New) The machine-readable medium according to claim 27, wherein the deterministic components include peak values of the input voice signal in a frequency spectrum.

47. (New) The machine-readable medium according to claim 27, wherein the residual components include deviation components between a synthetic voice signal and the input voice signal.